



SpaceNews  
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MONDAY MAY 31, 1993

SpaceNews originates at KD2BD in Wall Township, New Jersey, USA. It is published every week and is made available for unlimited distribution.

\* ARSENE NEWS \*  
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The FF1STA ARSENE satellite control station has switched OFF the VHF mode Thursday May 27 until Tuesday June 1st. The ARSENE team needs some rest during the weekend and does not want ARSENE to develop any problems while the control station is vacant. As a consequence of switching the VHF mode OFF, stations willing to help by searching for the ARSENE VHF beacon somewhere between 140 and 150 MHz are asked to suspend the search until Tuesday June the 1st when VHF beacon will be reactivated and Mode S will open for traffic.

The RACE would like to thank all Radio Amateurs for the numerous messages of sympathy we have received concerning the launch of this new Radio Amateur satellite.

73 de Bernard, F6BVP

\* STS-57 NEWS \*  
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The launch date for Space Shuttle Endeavour on mission STS-57 has been delayed until the week of 14-18 June due to problems with a pump on the Shuttle's main engine.

STS-57 will be a low (28.5 degree) inclination mission carrying SAREX configuration C, which will include FM voice and packet radio operations. The 6 member Endeavour crew includes: Ronald Grabe, Commander, Brian Duffy, (N5WQW) Pilot, G. David Low, Payload Commander, Nancy Sherlock, Mission Specialist, Janice Voss, Mission Specialist, and Peter Wisoff, Mission Specialist.

\* STAR WARS TEST LAUNCHED \*  
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The US Air Force launched a "Star Wars" research rocket on Sunday 23-May-93 from Cape Canaveral, Florida to test the ability of sensors to distinguish between incoming warheads and decoys. The early morning launch came a day

after technical difficulties forced a launch delay. The rocket carried an 800 pound payload named "Red Tigress 2" to an altitude of 235 miles. Satellites, ground-based radar, and surveillance aircraft monitored the 15-minute flight while 13 experiments were ejected. They separated into about 60 objects, some visible at that altitude by the rising sun. The rocket then splashed down in the Atlantic Ocean about 465 miles off the coast of Florida.

★ AMSAT-OSCAR-13 NEWS ★

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The following is from G3RUH via N2NRD:

M QST 1993 May 21. The transmitter section of the Oscar-13 mode-L transponder appears to have stopped working. Therefore, while investigations proceed, the mode-JL session has been deleted from the schedule. Mode-B now resumes at MA 195.

During MA 190-195, PSK telemetry is available on the S-band beacon.  
73 de James G3RUH and Peter DB20S.

L QST \*\*\* AO-13 TRANSPONDER SCHEDULE \*\*\* 1993 May 21 - May 31

Mode-B : MA 0 to MA 130 ! Alon/Alat 206/6  
Mode-BS : MA 130 to MA 180 !<- S transponder; B trsp. is ON  
Mode-S : MA 180 to MA 190 !<- S transponder; B trsp. is OFF  
Mode-S : MA 190 to MA 195 !<- S beacon ; L trsp. is OFF  
Mode-B : MA 195 to MA 256 ! Move to attitude 120/0, May 31  
Omnis : MA 250 - MA 60 !

Please don't uplink on B, 180-190; interferes with mode-S.

N QST de G3RUH 1993 May 21. Mode S will be ON for nearly 3 hours, MA 130 to MA 195. New stations appear daily.

MA 130-180 you will have to endure the coupling from Mode-B users operating at 145.880 - 145.920 MHz. Either work between them, use as test signals or go x-band.

MA 180-190 is Mode S transponder exclusive ( plus B beacon).

MA 190-195 is Mode S beacon only.

73 de James G3RUH and Peter DB20S

★ AMSAT-OSCAR-21 NEWS ★

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RUDAK-2 onboard AO-21 (RS14) is now transmitting Junior's Peace Message in Russian (female voice) in addition to the English voice. The FM mode repeater and 1200 Baud AFSK AX.25 Telemetry are also still in operation. A French voice will be loaded next month.

[Info via Peter, DB20S at AMSAT-DL]

\* AMSAT-UK COLLOQUIUM '93 \*

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Please be advised that the Eighth Annual AMSAT-UK Colloquium will take place at the University of Surrey Conference Halls and New Space Building from AM Thursday 29th July to PM Sunday 1st August.

The Secretary of AMSAT-UK advises that there are over eighteen Papers already promised with more to arrive plus plenty of 15 and 30 minute talks, and demo without Papers being presented by members during the four days of Colloquium '93.

Please be advised that ALL delegates who attended 1992 Colloquium will receive an Application Form as a matter of course. These will be sent out to all addressees on last years file on 25th MAY 1993. Any other person or groups who wish to addend, should send a stamped addressed envelope, or 3 IRC to Ron Broadbent, G3AAJ, AMSAT-UK, London E12 5EQ England before 15th June 1993. Mark top Corner of the envelope: Request for Colloquium Application. This enables coordinators to get the applications to you posted the same day as they are received with other mail.

Please note: This Colloquium is a Satellite Get-together and we welcome ANYONE giving us their experiences, tips, technical advise and new ideas. This is a FUN by learning weekend in the South of England Countryside.

[Info via Ron, G3AAJ Hon. Sec. AMSAT-UK]

\* THANKS! \*

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Thanks to all those who sent messages of appreciation regarding SpaceNews, especially:

N3GWR

\* FEEDBACK/INPUT WELCOMED \*

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Mail to SpaceNews should be directed to the editor (John, KD2BD) via any of the following paths:

FAX : 1-908-747-7107

UUCP : ...catfish.ocpt.ccur.com!ka2qhd!kd2bd

PACKET : KD2BD @ NN2Z.NJ.USA.NA

INTERNET : kd2bd@ka2qhd.ocpt.ccur.com -or- kd2bd@amsat.org

MAIL : John A. Magliacane, KD2BD

Department of Engineering and Technology  
Advanced Technology Center  
Brookdale Community College  
Lincroft, New Jersey 07738  
U.S.A.

<<= SpaceNews: The first amateur newsletter read in space! -=>>

/EX

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John A. Magliacane, KD2BD \* /\ \* Voice : 1-908-224-2948  
Advanced Technology Center |/\| Packet : KD2BD @ NN2Z.NJ.USA.NA  
Brookdale Community College |/\| Internet: kd2bd@ka2qhd.ocpt.ccur.com  
Lincroft, NJ 07738 \* /\ \* Morse : -.- -.. ..--- -... -..

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Date: Fri, 28 May 93 18:13:20 GMT  
From: usc!howland.reston.ans.net!sol.ctr.columbia.edu!caen!destroyer!cs.ubc.ca!  
unixg.ubc.ca!kakwa.ucs.ualberta.ca!alberta!adec23!mark@network.UCSD.EDU  
Subject: 450MHz mobile radio and engine management systems...  
To: info-hams@ucsd.edu

P.Lucas@mail.nerc-swindon.ac.UK writes:

>[f.y.i. NMT450 phones operate in the 450MHz band with an output of up to  
>5 watts; NMT-900 are 900MHz phones, while GSM works at over 1GHz].  
>  
>I guess this same problem is likely to be of big interest to hams who  
>like running high power 440MHz! Watch this space.

Sure, it is of interest, but also to the QRP users since Cell Phones are  
typically <3W output ...

-- Mark

My Skull is a 900MHz resonant Cavity

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Date: Fri, 28 May 1993 14:35:13 GMT  
From: usc!howland.reston.ans.net!gatech!emory!rsiatl!ke4zv!gary@network.UCSD.EDU  
Subject: Balanced feedline (was: G5RV)  
To: info-hams@ucsd.edu

In article <1993May27.182537.22611@news.mentorg.com> mbutts@mbutts.mentorg.com  
(Mike Butts) writes:

>

>My question is how long to make the flattop. Zack Lau at ARRL says 86 feet  
>is a 'magic' length good for 20 meters. Gary Coffman says 105 feet is  
>a 'classic' length for a center-fed flattop. Why? I don't see the  
>wavelength relationships for either.

And that's the point. If the antenna presented a resonant length on one band, it would present a resonance at a multiple on higher bands, and that would give a very high feedpoint impedance that's hard to match. By picking a length that's not harmonically related to the bands, the tuner will see an impedance more in line with it's available matching range. 105 feet works well for 75 meters and above. If you don't need 75, then the 86 foot length should work at 40 and above. It will be a little hard to feed on 75 meters, and a bit tricky to match on 40, and it's efficiency won't be as good on those bands, but it'd even suffice for local contacts on 75.

>Also, if the feedline is balanced and I'm using a balanced tuner, does the  
>feedline length really matter, as some seem to think? Or does it only  
>matter if the feed or match is unbalanced.

Yes it can matter. While the line is *\*balanced\**, it's not *\*matched\** and will have a relatively high SWR. Now that's not a problem from the loss standpoint, but a transmission line with an SWR other than 1:1 acts as a transmission line *\*transformer\** and will change the impedance seen by the tuner. Tuners don't have infinite matching range, and different feedline lengths can present impedances that are sufficiently different to make the difference between go and no go with a particular tuner.

>By the way, my tuner's schematic (AEA Econotuner) shows a center-tap-  
>grounded inductor with the balanced feedline across the whole thing and the  
>single-ended connection to the rest of the tuner and rig connected to one  
>end.

Gack! I expect this tuner will present some interesting problems. It's just a 4:1 voltage balun hung off of an L network. It probably won't have enough range to deal with the complex impedances presented by the "universal" zepp. A link coupler with a split stator capacitor and symmetrical tapped inductor would be better. An S-P network might be good if you can't stand tapped inductors.

Gary

--

Gary Coffman KE4ZV		You make it,		gatech!wa4mei!ke4zv!gary
Destructive Testing Systems		we break it.		uunet!rsiatl!ke4zv!gary
534 Shannon Way		Guaranteed!		emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244				

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Date: 28 May 93 20:10:07 GMT  
From: news.tek.com!tekig7!tekig5!johnh@uunet.uu.net  
Subject: DX88 vs. GAP vs. R7 etc.  
To: info-hams@ucsd.edu

Recent articles have discussed the GAP, R7, HF6V, G5RV, etc. Does anyone have experience with the DX88? I am looking for that "perfect" HF all band antenna.

John K7SII  
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Date: Fri, 28 May 1993 13:50:26 GMT  
From: usc!howland.reston.ans.net!gatech!emory!rsiatl!ke4zv!gary@network.UCSD.EDU  
Subject: IC 271/471 vs IC 275/475 Performance Question  
To: info-hams@ucsd.edu

In article <seeler.17.738498832@UPEI.CA> seeler@UPEI.CA (David Seeler) writes:  
>Just a quick note to ask your opinion about the performance of the IC 271/471  
>radio pair versus the more recent models - the IC 275 and IC 475. My interest  
>relates to the fact that there are published mods for the 271 and 471 for use  
>with 9.6 Kb packet. The 275 and 475 have received good reviews in the past  
>for general as well as satellite operations.  
>  
>Can the same be said of the earlier pair?

The progression goes 211, 251, 271, 275. The 211 is first generation, and with a Mutek frontend board swap, is a good satellite rig. It is based on the 700-720 HF rig chassis. The 251 is a modified 211 with less desirable characteristics. However, with the Mutek board it's also a servicable satellite rig. The 271 is a different design, based on the chassis of the 751, that was short lived on the market. I don't think an upgrade package was available for it. The 275 is a major new design that's fully competitive as a first class satellite rig as it comes out of the box. The same comments apply to the 4xx series except there wasn't a 411.

The 271 is a different radio than either the ones before or after. And it didn't last long on the market, so there aren't a lot of them out there for comparison testing. The 275 is a major step forward from any of the earlier radios. The receiver is really good. The older radios needed aftermarket replacement front ends to be competitive. If money weren't an issue, I'd definitely go with the new radios. If money were an issue, I'd look for the old stuff and add the Mutek

board. I think I'd pass on the 271 since it's somewhat of an orphan.  
It's not a \*bad\* radio, but it's not that great either, and there  
isn't an easy upgrade path.

Gary

--

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534 Shannon Way		Guaranteed!		emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244				

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Date: Fri, 28 May 1993 19:49:09 GMT  
From: usc!howland.reston.ans.net!torn!nott!cunews!freenet.carleton.ca!  
Freenet.carleton.ca!ae517@network.UCSD.EDU  
Subject: IC 271/471 vs IC 275/475 Performance Question  
To: info-hams@ucsd.edu

Whoa minute! As a very new owner to a previously owned 251A, I'd  
like to have this claimed superiority between the 211 and the 251  
better substantiated, or at least better explained. All the, or  
the beeter part of the 211's being sold on the used markets were  
sold as handyman's special, the PLL had gone south and either  
the owner was incapable of repairing them OR our local Icom  
distributor was unable to provide parts or service. The one  
211 I actually saw working had a very crude freq generation/pll  
scheme and was quite awkward to use compared to the 251A.  
Relating to this, what DOES the Mutek front end provide to a 251  
owner that a good preamp will not?? Certainly anyone who would  
want to use this rig for satcoms or EME would put an outboard  
preamp on this rig anyway.

Could Gary or someone elaborate on this?

If not just a perceived difference, where could one get the  
Mutek board, if it makes that great of a difference?

thanx in advance de ve3uav

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Date: 27 May 1993 16:10:23 -0400  
From: dog.ee.lbl.gov!overload.lbl.gov!agate!howland.reston.ans.net!noc.near.net!  
jericho.mc.com!levine@network.UCSD.EDU  
Subject: Rohn BX tower structural failures (any examples?)  
To: info-hams@ucsd.edu



In article <C7p92r.2FH@acsu.buffalo.edu>, v111qheg@ubvmsb.cc.buffalo.edu (P.VASILION) writes:

|> Has anyone been unfortunate to experience a structural failure on a Rohn BX  
|> tower? If so, what happened? Where? How much load was it carrying? How much  
|> weight? Did the owner feel it was unsafe? Anyone on it when it failed?  
|>  
|> Please E-mail me the answers. Thanks,  
|>  
|> Peter Vasilion, KB2NMV  
|> v111qheg@ubvmsb.cc.buffalo.edu

This is a strange tower. Rohn states it is rated for a maximum 10' boom. I considered one but was talked out of it by several hams whose opinions I respect. I don't have experience with one, but be SURE to get an up close look at one before you invest. I saw one and the members don't even look sturdy enough to trust climbing. The price is nice though.

Be sure to check out the Rohn Engineering Catalog for the 10' rule. What you don't want is for it to come down then have your insurance company find out you "overloaded" it by putting any HF yagi on it. Unless you put a quad up, you will be hard pressed to find HF antennas with than a 10' boom.

73 Bob KD1GG  
FTAC

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Date: 28 May 1993 15:57:00 -0400  
From: digex.com!digex.net!not-for-mail@uunet.uu.net  
Subject: Sentry Crystal phone number  
To: info-hams@ucsd.edu

Now that Savoy Crystal has gone 10-7 out of business, we want to find another source for crystals for our repeater linking project.

I already know about International Crystal.

I need the phone number for Sentry Crystal. The lady who answered their old 800 number said they changed it 3 years ago and wishes she knew the new number; I guess she wants to give them a piece of her mind.

As a substitute, I would settle for the place name where Sentry is located so that I can call directory assistance.

Send me email and I will report back.

Thanx!

--

bote@access.digex.net (John Boteler)  
WARNING: You are subject to pre-emption!

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Date: Fri, 28 May 1993 15:18:49 GMT  
From: usc!howland.reston.ans.net!gatech!emory!rsiatl!ke4zv!gary@network.UCSD.EDU  
Subject: Why 455 kHz?  
To: info-hams@ucsd.edu

In article <103360182@hpfco.FC.HP.COM> wayne@hpfco.FC.HP.COM (Wayne Covington) writes:

>Does anyone here know why almost all consumer-grade AM broadcast band radios  
>have used a 455 kHz or thereabouts i.f. frequency, i.e., why did they settle  
>on 455 kHz? This must date back to the 1940s at least.

>

>(One exception I saw was an old car radio with a 262 kHz i.f. And of course  
>good amateur and commercial equipment has used other frequencies.)

>

>Reasons I have heard include a) in the early days the most readily available  
>i.f. transformers used this frequency, b) (related to item a in a chicken  
>vs egg manner) one or two big manufacturers arbitrarily chose this frequency  
>and almost everyone else followed the leader, c) some industry committee made  
>the decision, d) it was believed this had the least potential for stray  
>radiated i.f. signals interfering with other radio services (I have a hard  
>time believing this one), and e) early radios had horrendous image-rejection  
>problems unless the i.f. frequency was this high (I also have a hard time  
>believing this one).

The answers are d and e. A radio using high side injection and a 455 kHz IF will have it's image fall above the broadcast band for all but the very lowest channels. The image will be 910 kHz above the desired station. This also puts the receiver's local oscillator above the marine safety channels below the broadcast band. Many of the old receivers had lots of LO leakage and long wire antennas to couple it to. 455 kHz was about as high as you could go and still receive 550 kHz using no tune LC filters in the front end. TRF radios could be tuned much tighter, but the consumer was demanding an easy to use, inexpensive, appliance even then. The reason for the 5 on the end rather than just 450 kHz was that this would put the LO radiation between channels for listeners at the top end of the band when their neighbors were listening to the bottom. 5 khz hetrodynes were HiFi to the audio amps of the day and were much less noticable than an on channel growl.

Gary

--

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534 Shannon Way		Guaranteed!		emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244				

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Date: Fri, 28 May 1993 20:41:45 GMT

From: usc!howland.reston.ans.net!darwin.sura.net!rsg1.er.usgs.gov!

resdgs1.er.usgs.gov!tbodoh@network.UCSD.EDU

Subject: Yaesu FT-5200 vs Alinco DR-600T

To: info-hams@ucsd.edu

In article <C7r313.EI@rahul.net>, davidj@rahul.net (David Josephson) writes:

|> In <1u4sns\$4qi@vtserf.cc.vt.edu> benchoff@groupw.cns.vt.edu (Phil Benchoff) writes:

|>

|> >I am considering purchase of a new dual-band (2m/70cm) mobile radio.

|> >I would be interested in any comments re: Yaesu FT-5200 vs Alinco

|> >DR-600T. One thing I am interested in is the extended frequency

|> >coverage for both tx and rx.

|>

|> The other thing you should be interested in is spurious rejection,

|> 'cause the extended range isn't much good if it's full of birdies.

|> I have the Yaesu and I'm happy with it. The sensitivity and power

|> output fall off out of band but the spur rejection stays pretty

|> good, which is not the case with some of the earlier Alinco's.

|>

|> Mine covers 124 to 172 and 400 to 475 in rx, about 130-160 and

|> 410 to 470 in tx. At the edges, rx sensitivity is down to about

|> a millivolt and tx gets grungy.

|>

|> 73 David WA6NMF

|> --

|> David Josephson <davidj@rahul.net>

--

VHF/UHF manufacturers have good luck appealing to the crowd who want a combination scanner/VHF/UHF rig. Why haven't any of them come out with a rig that reduces the intermod through the use of triple up-conversion as most of the scanner manufacturers are doing? And why are the scan/search rates about 1/10 of that of many scanners? What about scan banks?

++++  
+ Tom Bodoh - Sr. systems software engineer

+

+ USGS/EROS Data Center, Sioux Falls, SD, USA 57198 (605) 594-6830 +  
+ Internet; bodoh@dgg.cr.usgs.gov (152.61.192.66)

+

+ "Welcome back my friends to the show that never ends!" EL&P

+

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Date: Fri, 28 May 1993 15:00:05 GMT

From: usc!howland.reston.ans.net!gatech!emory!rsiatl!ke4zv!gary@network.UCSD.EDU

To: info-hams@ucsd.edu

References <9305241532.AA03807@ginzo.wellfleet>,

<1993May26.042816.20925@ke4zv.uucp>, <1993May28.003827.9876@microsoft.com>

Reply-To : gary@ke4zv.UUCP (Gary Coffman)

Subject : Re: roof mounted tri-band beam

In article <1993May28.003827.9876@microsoft.com> davidar@microsoft.com (David Arnold) writes:

>Do you know where I could find a good source of tips/techniques for installing  
>antennas? Topics/issues like the ones you brought up? Wind/load, install  
>location, height, support/bracket options, and most importantly, safety!!  
>I want to install a Ringo Ranger on my roof which has a very steep pitch and a  
>wood framed stove pipe chimney.

The single best reference for towers, guying, wind load calculations, safety, etc is the Rohn catalog. The engineering data is well worth wading through the product material to find. Roof mounting a Ringo isn't very tough, though why anyone would go to the trouble to mount a Ringo when they could put up a \*real\* antenna for the same effort is beyond me. :-) (There are considerably better antennas, mechanically and/or electrically, than the Ringo in roughly the same price class, but if you've got it, use it.)

It doesn't sound like your chimney is strong enough to allow a conventional chimney strap mount. You may want to use a roof ridge bracket and a length of guyed TV masting for the antenna support. Many roofers use a rope that goes completely over the roof and is secured very well to an object on the opposite side of the house. Putting knots every couple of feet in the rope will give you something to hang on to as you "walk" the roof. Some people will tie the rope to a car bumper and let it's driver \*pull\* them up and down the roof. \*DON'T DO THIS\* unless you have absolute confidence in the driver, perfect communications, and a quick way to release the rope while still having a safety line to hang onto. It's much too easy to be pulled over the ridge and down the other side with this method. If you have any doubts about how to rig for this sort of work, get a local rock climber to show you how to rig out a belaying line. Some

roofers use "chicken" ladders. These are single boards, usually a 2x6, with short steps nailed on. The end of the board has a "lip" made from a piece of 2x6 that slips over the roof ridge. This kind of ladder is convenient, but don't use it without a belaying rope. A slip is still a long way down. Working on roofs or towers can be safe, and fun, but you really have to remember that a fall can kill or maim, and falls happen when we don't think through what we're doing. Never get in a hurry, always inspect your safety equipment, and use it properly.

>Gary (ke4zv), seems like most of the articles I end up filing in my HAM  
>folder are from you, thanks again!

Thank you!

Gary

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Gary Coffman KE4ZV          | You make it,      | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | we break it.     | uunet!rsiatl!ke4zv!gary
534 Shannon Way           | Guaranteed!      | emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244   |                   |
```

-----  
Date: 27 May 1993 16:04:59 -0400  
From: usc!howland.reston.ans.net!noc.near.net!jericho.mc.com!  
levine@network.UCSD.EDU  
To: info-hams@ucsd.edu

References <1515@arrl.org>, <C7p06r.K9y@ucdavis.edu>,  
<m0a4efINN2th@news.bbn.com>co  
Subject : Re: Question: Can a novice take the extra test?

In article <m0a4efINN2th@news.bbn.com>, levin@bbn.com (Joel B Levin) writes:  
|> ez006683@othello.ucdavis.edu (Daniel D. Todd) writes:  
|> | When my girlfriend took her no-code she had to take the novice portion  
|> |twice. The VE (ARRL) made her pay another testing fee to retake the  
|> |element. Is this the VE's decision or does the VEC send down the word on  
|> |element retesting fees. Someone else said they had to retake another  
|> |element and said they didn't charge him the testing fee twice.  
|>  
|> The ARRL VE manual specifies that a test may be retaken at the option  
|> of the VE team administering a test (they may not have a different  
|> form of the test on hand, for instance). If they decide to allow it,  
|> they must charge a second testing fee.  
|>  
|> Other VECs may give their VEs other instructions.

```
|>  
|> /JBL  
|> =  
|> Nets: levin@bbn.com | "GO TO JAIL. Go directly to jail. Do not pass  
|> POTS: (617)873-3463 | Go. Do not collect $200."  
|> KD10N (@KB4N.NH.USA) | -- Parker Brothers  
|>
```

KD10N, your information is incorrect. There is NO fee for retesting for a NOVICE level examination by any ARRL VE Team with the exception of one who is a No-Code Technician who takes 1a to become a Technician w/HF. That charge will also be waived after the Novice testing is rolled into the VE Program on July 1.

You are correct about the re-examination being at the discretion of the VE Team. Field Stocked VE Teams have 4 versions of the cw exams and 6 versions of the written, so that usually isn't the problem. Time is.

73 Bob KD1GG

(btw, nice to meet you on BARS Repeater today!)

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End of Info-Hams Digest V93 #655

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